

REMARKS

A check in the sum of \$775 is enclosed for the additional four independent claims (22, 24, 28, and 32) and the fifteen claims exceeding twenty (21-35).

The courtesies extended by the Examiner, Mr. McCarry, during the telephone interview on February 14, 2005 are appreciated. It was explained to the Examiner that there was no rejection in the Office Action of February 4 of claim 18, which had been added by a preliminary amendment. He stated that claim 18 was rejected in the same manner as claims 1-4. The supplemental Office Action of February 24, 2005 includes the rejection of claim 18 on the same basis as claims 1-4.

Claims 1-4 and 18 have been rejected under 35 U.S.C. 103(a) as unpatentable over Rosenbaum in view of Ward.

The Examiner stated that Rosenbaum discloses a door operator for a bottom dumping vehicle. The system is comprised of a housing 136 (elongated cylinder - line 18, col. 6) supported by the vehicle and accommodates a double acting piston 142 (It was explained during the telephone interview that the numeral used to identify the piston in Rosenbaum should have been 142 rather than 132, which is a first double-acting cylinder-lines 7 and 8, col. 6.) that moves in a first direction and a second direction in and out of the housing 136 to open and close the door of the vehicle. The piston is operated by either compressed air or liquid (sic; fluid) and when the air or fluid is supplied or relieved the doors will open or close. A control assembly 152 operates in a

first mode to (sic) and a second mode. The first mode maintains the doors in a closed position while the second mode maintains the doors in an open position. The control assembly 152 allows for a predetermined amount of air or fluid to be applied to the piston 142 to move the doors from one position to another or to maintain the doors in either the open or closed position. The control assembly 152 is connected to an air supply 154 by means of input port 166 and conduits 168 and 170. Two output ports 174 and 176 establish communication between the control assembly 152 and the piston 142.

The Examiner said that Rosenbaum discloses the door actuator assembly as described above. However, he added that Rosenbaum does not disclose the doors use on a railroad car, but that Ward discloses a railroad car with bottom dump doors. He concluded that it would have been obvious to one of ordinary skill in the art to understand that a door assembly, like that of Rosenbaum could have been applied to a railroad car, like that of Ward since the two vehicles are substantially the same construction except for the mode of travel with which they are used.

There is no suggestion or motivation in either patent of applying the door assembly of Rosenbaum to a railroad car as the Examiner contended. A railroad car is not substantially the same construction as a semi-trailer 10 of Rosenbaum.

The mode of travel, as the Examiner recognized, is completely different for a railroad car than the semi-trailer 10 of Rosenbaum. That is, there is no problem in Rosenbaum of

opening the door at any position since the semi-trailer 10 of Rosenbaum can be stopped at any location and the operation of the doors manually controlled by the driver of a tractor 12 connected to the semi-trailer 10. In Ward, hydraulic pressure, not pneumatic pressure, drives the hopper doors for opening and closing them (lines 13-18, col. 1). The pneumatic pressure must be converted to more acceptable forms of power (lines 46 and 47, col. 2).

Furthermore, Ward, unlike applicants' invention, selectively discharges stone ballast onto a road bed of a railway (lines 23-26, col. 1) through doors 47 (see FIG. 2) between rails 24 and through doors 48 outside of the rails 24 (lines 20-24, col. 5). While lines 27-31, col. 1 of Ward set forth that its control system may be used in other hydraulic applications where the available power is a pneumatic power supply such as large trucks, the opposite concept of the control system of Rosenbaum being used on a railroad car is not suggested in Rosenbaum or in Ward.

Neither patent has any suggestion of recognizing or solving the problem of insuring that material within the railroad car is released by opening the door when the air pressure exceeds a predetermined amount and that inadvertent opening of the door can occur prior thereto. This is discussed in line 25, page 1 - line 26, page 2 of the application.

Claim 1 distinguishes from Rosenbaum and Ward in requiring a control element for preventing air pressure from acting in the first direction on the piston until the air pressure exceeds a predetermined amount. The Examiner has identified a gate control

assembly 152 (see FIG. 5) of Rosenbaum as the control assembly for allowing a predetermined amount of air or fluid to be applied to the piston 142 to move doors 34 and 36 from one position to another or to maintain the doors in either the open or closed position.

However, Rosenbaum has no disclosure of the gate control assembly 152 preventing air pressure from acting in the first direction on the piston 142 to cause opening of the doors 34 and 36 until the air pressure exceeds a predetermined amount. Instead, Rosenbaum applies the air pressure through a conduit 177 to a second end 138 of the cylinder 136 to act on the piston 142 to open the doors 34 and 36. This occurs only when a gate opening section 184 of a control valve 158 of the control assembly 152 is interposed between an input port 166 and an exhaust port 172, respectively, and output ports 176 and 174, respectively, through actuation of a solenoid 188 (lines 3-11, col. 10).

There is no contention in the Office Action of the control assembly 152, which it is assumed that the Examiner considers the control element of Rosenbaum, being capable of preventing air pressure from acting in a first direction to open the doors 34 and 36 until the air pressure exceeds a predetermined amount. Instead, line 9 of the paragraph describing Rosenbaum in the Office Action sets forth that there is only a predetermined amount of air pressure allowed to be applied to the piston 142 by the control assembly 152. This occurs when the solenoid 188 is

energized. Applicants energization of solenoid 17 (see FIG. 1) does not allow piston 35 to be moved until the air pressure exceeds a predetermined amount.

Claim 2, which depends from claim 1, adds that the control element comprises a pressure responsive element between a source of air pressure and the piston to block supply of air pressure in the first direction for preventing the air pressure from acting in the first direction on the piston until the air pressure exceeds a predetermined amount. In Rosenbaum, there is no pressure responsive element between the air reservoir 154 and the piston 142 to block supply of air pressure in the first direction to act on the piston to cause movement of the door to its open position for preventing the air pressure from acting in the first direction on the piston until the air pressure exceeds a predetermined amount. The Examiner has not identified any pressure responsive element in Rosenbaum. The control assembly 152 of Rosenbaum has no such structure, and this is deemed to be what the Examiner considers the control element.

Claim 3, which is dependent from claim 2, states that there is a first air passage in the housing, which the Examiner has identified in Rosenbaum as the cylinder 136, communicating with a source of air pressure to cause air pressure to act on the piston in the first direction to move the piston to its door opening position when the piston is in its door closing position. There is no first air passage in the cylinder 136 of Rosenbaum communicating with the source of air pressure (air reservoir 154)

to cause air pressure to act on the piston 142 in the first direction to move the piston to its door opening position when the piston is in its door closing position.

Additionally, claim 3 sets forth that the pressure responsive element comprises a first portion movably disposed in the first air passage, which is in the housing (cylinder 136 of Rosenbaum). There is no pressure responsive element having a first portion movably disposed in a first air passage in the cylinder 136 of Rosenbaum.

The pressure responsive element also has a second portion holding the first portion in a passage blocking position until the air pressure exceeds a predetermined amount. There is no second portion in Rosenbaum holding the first portion, which is movably disposed in the first air passage in the housing, in a passage blocking position. There is no discussion in the Office Action of this claimed structure being in Rosenbaum.

Claim 4, which depends from 3, adds that the second portion of the pressure responsive element is a resilient element disposed in the first air passage, which is in the housing (identified by the Examiner as cylinder 136 of Rosenbaum) and communicates with a source of air pressure. Claim 4 also requires the resilient element to continuously urge the first portion of the pressure responsive element into its passage blocking position when the air pressure does not exceed the predetermined amount. Rosenbaum does not have this structure, and the Examiner has not urged that it does.

Claim 18 recites that the control device comprises a resiliently biased control element for preventing movement of the piston to its door opening position until the air pressure acting on the piston exceeds a predetermined amount. There is no resiliently biased control element in Rosenbaum as previously discussed with respect to claim 4. The resiliently biased control element must prevent movement of the piston to its door opening position until the air pressure acting on the piston exceeds a predetermined amount.

As previously mentioned with regard to claim 1, there is no suggestion in Rosenbaum of the air pressure, which acts on the piston 142, exceeding a predetermined amount. The application of a predetermined amount of pressure on the piston 142 of Rosenbaum, as the Examiner stated, is not a teaching of the air pressure exceeding a predetermined amount.

Newly submitted claim 19, which depends from claim 18, adds that the resiliently biased control element comprises a pressure responsive element between a source of air pressure and the piston to block supply of air pressure in the first direction for preventing the air pressure from acting in the first direction on the piston until the air pressure exceeds a predetermined amount. In Rosenbaum, air pressure is not prevented from acting on the piston 142 until the air pressure exceeds a predetermined amount.

Newly added claim 20, which is dependent from claim 19, adds that the control device comprises a first air passage in the housing communicating with a source of air pressure to cause air

pressure to act on the piston in the first direction to move the piston to its door opening position when the piston is in its door closing position. Claim 20 also recites that the pressure responsive element comprises a first portion movably disposed in the first air passage and a second portion holding the first portion in a passage blocking position until the air pressure exceeds a predetermined amount. This is not disclosed in Rosenbaum or Ward as discussed relative to the rejection of claim 3.

Newly submitted claim 21, which depends from claim 20, adds that the second portion of the pressure responsive element is a resilient element disposed in the first air passage and continuously urges the first portion of the pressure responsive element into its passage blocking position when the air pressure does not exceed the predetermined amount. This claim differs further from Rosenbaum and Ward for the reasons set forth relative to the rejection of claim 4.

Newly added claim 22 recites that the door is movable between a closed position in which material within the railroad car is retained within the railroad car and an open position in which the material within the railroad car is released therefrom only when the railroad car is at a predetermined position along its predetermined travel path at which it is desired for the door to open. Claim 22 also calls for a control element for preventing the door from opening until the railroad car is at the

predetermined position along its predetermined travel path and the air pressure in the housing exceeds a predetermined amount.

There is no predetermined travel path in Rosenbaum since it is not a railroad car, which rides on fixed rails. As previously set forth, there is no suggestion or motivation for using the structure of Rosenbaum in a railroad car as the Examiner contended.

Rosenbaum is directed solely to a manual control, not an automatic control. Thus, the Examiner's contention that Rosenbaum's structure could have been applied to a railroad car like Ward would not produce a control element for preventing the door from opening until the railroad car is at the predetermined position along its predetermined travel path and the air pressure in the housing exceeds a predetermined amount. While Ward has a predetermined travel path, the Examiner has not relied upon Ward for any teaching that opening of the door is prevented until the railroad car is at the predetermined position along its predetermined travel path. Ward also does not prevent opening of the door by having the air pressure in the housing exceed a predetermined amount.

Newly submitted claim 23, which depends from claim 22, adds that the control element prevents the door from opening until the railroad car is at the predetermined position along its predetermined travel path by preventing air pressure from acting in the first direction on the piston until the air pressure in the housing exceeds a predetermined amount at the predetermined

position of the railroad car along its predetermined travel path. Rosenbaum has no predetermined travel path, and it does not prevent air pressure in the cylinder 136 (housing) from acting on the piston 142 until the air pressure exceeds a predetermined amount at the predetermined position of the railroad car along its predetermined travel path. This problem does not exist in Rosenbaum wherein it is merely a manually activated system with the semi-trailer 10 being capable of any path taken by the tractor 12.

Newly added claim 24 is directed to a method for controlling at least one bottom dump air operated door for a railroad car movable between a closed position in which material within the railroad car is retained within the railroad car and an open position in which the material within the railroad car is desired to be released therefrom only when the railroad car is at a predetermined position along its predetermined travel path. The method comprises moving a piston in a housing between a door closing position and a door opening position in response to air pressure acting in a first direction on the housing piston to cause movement of the door to its open position and to air pressure acting in a second direction on the housing piston to cause movement of the door to its closed position and preventing movement of the housing piston to its door opening position at the predetermined position of the railroad car along its predetermined travel path until a predetermined air pressure in the housing is exceeded.

As previously discussed, Rosenbaum relates to a manually operated system on the semi-trailer 10 connected to the tractor 12. There is no suggestion in Rosenbaum of preventing movement of the piston 142 in the housing (cylinder 136) to its door opening position until a predetermined air pressure in the housing is exceeded as previously mentioned. There also is no suggestion of this in Ward. There is no teaching in either patent of preventing movement of the housing piston to its door opening position at the predetermined position of the railroad car along its predetermined travel path until a predetermined air pressure in the housing is exceeded.

Additionally, as previously set forth, the only suggestion or motivation of the door actuator assembly of Rosenbaum being applied to a railroad car is applicants' disclosure. A railroad car and a highway propelled vehicle such as the semi-trailer 10 of Rosenbaum are not substantially the same construction.

Newly submitted claim 25, which is dependent from claim 24, adds that the air pressure in the housing is prevented from acting in the first direction on the housing piston to cause movement of the door to its open position unless the railroad car is at the predetermined position along its predetermined travel path and it is determined that the air pressure in the housing acting in the first direction on the housing piston exceeds a predetermined amount.

The semi-trailer 12 of Rosenbaum does not move along a predetermined path. There also is no suggestion of preventing

the air pressure in the housing (cylinder 136) from acting in the first direction on the piston (This causes movement of the door to its open position.) unless the railroad car is at the predetermined position along its predetermined travel path and it is determined that the air pressure in the housing acting in the first direction on the piston to cause movement of the door to its open position exceeds a predetermined amount.

Each of newly submitted claims 26 and 27, which depend from claims 25 and 24, respectively, calls for supplying the air pressure in the housing to act on a piston connected to the door and disposed in a cylinder supported by the railroad car to move the door connected piston to open the door when the housing piston is moved in the first direction and supplying the air pressure in the housing to act on the door connected piston and disposed in the cylinder supported by the railroad car to move the door connected piston to close the door when the housing piston is moved in the second direction. This limitation of the air pressure acting on the housing piston being supplied to the door connected piston is not found in Rosenbaum or Ward.

Newly added claim 28 is directed to a railroad car having at least one bottom dump air operated door movable between a closed position in which material within the railroad car is retained within the railroad car and an open position in which the material within the railroad car is released therefrom only when the railroad car is at a predetermined position along its predetermined travel path at which it is desired for the door to

open. The claim also calls for a cylinder supported by the railroad car, a piston disposed in the cylinder and connected to the door for moving the door between its closed and open positions, and a control device for controlling supply of air pressure to the door connected piston to move the door between its closed and open positions. The claim requires the control device to comprise a housing supported by the railroad car, a piston movable in the housing between a door closing position and a door opening position in response to air pressure acting in a first direction on the housing piston to cause movement of the door to its open position and to air pressure acting in a second direction on the housing piston to cause movement of the door to its closed position, the housing piston allowing air pressure in the housing to act on one side of the door connected piston to open the door when the air pressure moves the housing piston to its door opening position to enable the air pressure in the housing to flow from the housing to the cylinder to act on the one side of the door connected piston, and the housing piston allowing air pressure to act on the other side of the door connected piston to close the door when the air pressure moves the housing piston to its door closing position to enable the air pressure in the housing to flow from the housing to the cylinder to act on the other side of the door connected piston. The claim further recites a control element for preventing movement of the housing piston to enable air pressure to flow from the housing to the cylinder to act on the one side of the door connected piston

to open the door until the air pressure exceeds a predetermined amount at the predetermined position of the railroad car along its predetermined travel path.

In addition to distinguishing from Rosenbaum for the reasons discussed with respect to claim 23, Rosenbaum does not have a piston of a control device that enables the supply of air pressure from the housing to the door connected piston to move the door between its open and closed positions. That is, the Examiner has identified the cylinder 136 as the housing piston. However the piston 142 is connected to the doors 34 and 36. Thus, Rosenbaum does not have two separate pistons.

Neither Rosenbaum nor Ward has a control device comprising a control element for preventing movement of the housing piston to enable air pressure to flow from the housing to the cylinder to act on the one side of the door connected piston to open the door until the air pressure exceeds a predetermined amount at the predetermined position of the railroad car along its predetermined travel path as recited in claim 28.

Newly submitted 29, which is dependent from claim 28, adds that the control element, which prevents movement of the housing piston (separate from the door connected piston of claim 28), comprises a pressure responsive element between a source of air pressure and the housing piston to block supply of the air pressure in the first direction for preventing the air pressure from acting in the first direction on the housing piston until

the air pressure exceeds a predetermined amount. This is not found in Rosenbaum because it does not have a control element comprising a pressure responsive element between a source of air pressure (air reservoir 154) and the housing piston to block supply of the air pressure until the air pressure exceeds a predetermined amount.

Newly added claim 30, which depends from claim 29, adds the same limitations to claim 29 as claim 3 added to claim 2. As set forth with regard to the rejection of claim 3, these limitations are not found in Rosenbaum or Ward.

Newly submitted claim 31, which is dependent from claim 30, has the same language as claim 4. This limitation is not disclosed in Rosenbaum or Ward as discussed relative to the rejection of claim 4.

Newly added claim 32 distinguishes from Rosenbaum and Ward for the same reasons as discussed relative to claim 22 other than the control element. Claim 32 recites that the control device comprises a control element for preventing movement of the piston to its door opening position at the predetermined position along its predetermined travel path until a predetermined air pressure in the housing is exceeded. Neither Rosenbaum nor Ward discloses a control element with these limitations.

Newly submitted claim 33, which depends from claim 32, adds the same language as claim 2 added to claim 1. As set forth with respect to the rejection of claim 2, this limitation is not found in Rosenbaum or Ward.

Newly added claim 34, which is dependent from claim 33, adds the same limitations to claim 33 as claim 3 added to claim 2. These limitations are not in Rosenbaum and Ward as explained relative to the rejection of claim 3.

Newly submitted claim 35, which depends from claim 34, adds the same limitation to claim 34 as claim 4 added to claim 3. It is deemed patentable for the same reasons as advanced relative to the rejection of claim 4.

An Information Disclosure Statement also is included with the Amendment. Two of the cited patents, Reustle and Peterson, are discussed herein. However, neither has any prevention of the door opening until a predetermined air pressure is exceeded.

The patent to Peterson shows a railroad hopper car 2 (see FIG. 1) having hopper doors 4 opened and closed by pneumatic means 6 operating a linkage 7 to open and close the doors 4. The car 2 has a coil 15 (see FIG. 2 - door opening position) energized by a ground coil 14, which is along the path of movement of the car 1 (see FIG. 1).

A solenoid 17a (see FIG. 2) is energized when the coil 15 is energized so that a valve 18 moves against a spring 19 to have grooves 20 in the valve 18 communicate with an outlet line 21 of a reservoir tank 11. Thus, pressurized air from the tank 11 flows through the outlet line 21 to an outlet line 23, which communicates with a supply line 24 to a supply valve 27 and a pilot line valve 25 to a pilot valve 47. The air pressure in the

supply line 24 acts on a supply valve member 28 of the supply valve 27 to move the supply valve member 28 to the right to enable air pressure to flow from the tank 11 through a line 26 and a line 41.

The air pressure in the line 25 is supplied to a chamber 49 to move a valve member 50 of the pilot valve 47 to the right in FIG. 2. This enables air pressure to be exerted on a piston head 43 of a piston 9 through grooves 51 in the valve member 50 to move the piston 9 downwardly to open the doors 4 (see FIG. 1). When pressurized air is supplied through the line 24 (see FIG. 2), the supply valve 27 is held in the latched position of FIG. 2 by a latch mechanism 33a.

When the car 2 (see FIG. 1) continues to advance, a ground-mounted induction coil 14' (see FIG. 3), which is located beyond the dumping area, energizes a coil 15' to connect the air pressure in the tank 11 through an exit line 21' to a line 25' since a solenoid 17a' of a solenoid valve 17' is energized by the coil 15' being energized. This shifts the valve member 50 to the left in FIG. 3 to block the line 41 (see FIG. 2). This supplies air through a line 46 (see FIG. 3) to the cylinder 8 to move the piston 9 upwardly to inactivate the latch mechanism 33a so that the supply valve member 28 moves to the left to block flow from the tank 11 through the line 26. This not only closes the doors 4 but also prevents leakage of air from the cylinder 8 (lines 47-53, col. 3).

There is no prevention of the doors 4 of Peterson from opening until the air pressure exceeds a predetermined amount.

The Reustle patent discloses a railroad hopper car having its dump doors open when an inductive pick-up coil 5 (see FIG. 2) of an electrical control system 50 is energized by a wayside induction coil 41 (see FIG. 1). A trip arm 2 (see FIG. 2) is engaged by a latch tripping means 40 (see FIG. 1) at a predetermined position to place the trip arm 2 in its trip position 2a (see FIG. 3). This opens an air supply valve 6 to allow pressurized air to flow from an inlet 7 into an air volume chamber 8. This builds up pressure on the face of a control valve piston 10 to move it from the position of FIG. 2 to the position of FIG. 3 against the force of a spring 12.

A choke 17 prevents the air pressure, which is acting on the control valve piston 10, from overcoming the pressure of the spring 12 for fifteen seconds. This insures that the control system 50 has not been energized by breakdown of one of its components.

After the fifteen second time lapse, the hopper car enters a dumping area 42 (see FIG. 1) so that energization of the coil 5 by the wayside coil 41 generates a current to energize a trigger circuit of a transistor 51 (see FIG. 3) through a diode 52. This allows current to pass through the transistor 51 from an air generator 53 to energize a control valve magnet 21. This results in air pressure flowing from a pipe 19 to a pipe 22 through a magnet valve port 20 and a port in the control valve piston 10 to

a reverse control pipe 16. This moves a dump door ram 14, which is connected to the dump door, to open the dump door of the car.

The air pressure flows from the air volume chamber 8 through a pipe 29 and a choke 31 and through pipes 18 and 28 and a choke 30 to act on a trip arm release piston 24 to release a mechanical latch 25 of the trip arm 2 thirty seconds after tripping. This returns the trip arm 2 to its normal untripped position as shown in FIG. 2.

Reustle releases material in the railroad car only when the railroad car is at a predetermined position along its predetermined travel path at which it is desired for the door to open. However, there is no prevention of the door from opening at the predetermined position until the air pressure in Reustle exceeds a predetermined amount. Instead, as described in lines 58-61, col. 2, a check of the control devices is made to determine that the control circuit is not falsely energized by a breakdown of the solid state components of the electrical control system 50. If there is a failure in the electrical control system 50, a magnet valve 21 is energized due to breakdown of electrical components in the electrical control system 50, and air flows into the pipe 22 through a port of the control valve piston 10 to a pipe 23 to trip arm release valve 11 to release the mechanical latch 25 on the trip arm 2 to close the air supply valve 6 (line 66, col. 2 - line 15, col. 3).

The Examiner stated that claims 5-7 were objected to as being dependent upon a rejected base claim but would be allowable if rewritten in independent form including all of the limitations

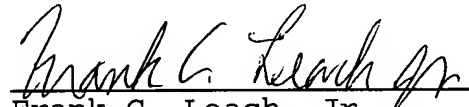
of the base claim and any intervening claims. Since claims 1-4 are deemed allowable, claims 5-7 have not been rewritten.

Claims 8-17 have been allowed.

Since claims 1-4 and 18-35 are considered patentable, it is respectfully urged that this application be allowed.

If this Amendment does not place the application in condition for allowance, the Examiner is respectfully requested to call applicants' attorney as discussed during the telephone interview on February 14.

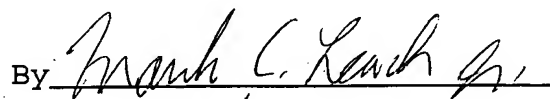
Respectfully submitted,


Frank C. Leach, Jr.
Attorney for Applicants

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on the date indicated below.

By 
Date April 1, 2005